



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

In another part of the city a little girl lay in a hospital. The day before, her father had brought her from away out in the state, with her right arm so badly broken and infected that the big, kind surgeon, who had little girls of his own, had to amputate it. Now this made the little girl's father very sad and restless. So while the small patient lay in her bed after the operation, sleeping away the anæsthetic, he scarcely knew what to do. He wandered down town, in and out of the stores. Presently he found himself in a toy department, and the thought came to him that of course his little sick daughter would like a doll. Brown-eyed doll saw him and he saw her pretty brown eyes and fluffy hair, and without further examination he purchased her. The "something" had happened, she thought, when she was placed within a box. But when she found herself hugged by a little sick girl, cuddled in the arm, the one arm, of the poor little sick girl she *knew* the "something" had happened, and she was happy. And this is what the little sick girl whispered to the brown-eyed doll: "You dear, dear baby, I love you," for girlie and dolly could sympathize with each other.

SOME NURSING POINTS IN THE BACTERIOLOGY OF TYPHOID FEVER

By F. R. CRAWFORD, M.D.

Clifton Springs Sanitarium, Clifton Springs, N. Y.

TYPHOID fever as a disease to be treated and nursed possesses many features that render it particularly fascinating. From the stand-point of the nurse this is very true. The patient is ill, in the first place. He is utterly helpless in her hands. He is suffering from an acute disease from which he is apt to die unless he receives the proper treatment, yet from a disease the mortality of which is relatively low when the proper care is exercised. He is suffering from a disease which will render him sick for weeks and will leave him much weakened, yet much can be done to offset this by the proper regulation of the diet, in which she can greatly aid the physician. He is suffering from an acute disease and if he recovers he may expect to be as well as formerly, thus the depressing element which is ever present in the nursing of the chronically-ill is done away with. Then in addition to this there is the constant watchfulness that must ever be practised on the part of the nurse, for it is on her powers of observation that the physician must rely chiefly for the early recognition of those grave and not infrequent accidents, hemorrhage and perforation. The combination of these elements makes the nursing of the typhoid patient interesting above that of the great majority of cases.

It is not my intention however to review the nursing of typhoid fever, but simply to take up from the stand-point of bacteriology a few facts that every nurse should have in mind when in contact with such patients.

The prophylaxis of typhoid fever from the stand-point of the nurse naturally divides itself into two heads, viz., means to protect others, the family and the community, and means to protect herself.

Typhoid fever is an acute infectious disease caused by the *Bacillus typhosus*. It is a disease of the gastro-intestinal tract. The organism is admitted to the body through the mouth with the food. Milk, drinking water, green vegetables, clams and oysters are a constant source of danger. Outside of the body the organism lives for a varying length of time, depending on the conditions. It has been known to live for seven days in river water. In pure drinking water it will live for some days but does not multiply. It has been known to live in soil that has been polluted for three months. It has been known to live for five months in fæces, this being, however, during the winter. The emptying of the sewage of many large cities on the coast into the rivers renders the chance of oyster infection great. The organisms have been known to live for days in the oyster. Milk cans washed in polluted water open the way for wide-spread epidemics. Green uncooked vegetables, washed in polluted water, are a source of danger. It is from some one of these sources that the chief danger of infection lies for the average individual. It is the nurse's duty to do her part to see to it that these sources of danger are done away with, by seeing that the source of supply of organisms is eliminated.

The intestinal tract of every typhoid case practically swarms with the bacilli. In addition to being excreted in the fæces they are also excreted in the urine and in the sweat. Thus it is evident that it is eminently necessary to thoroughly disinfect all excreta. Many epidemics have been traced to individual cases in which the proper measures had not been carried out. One well-known example of this, as quoted in Osler's "Text-Book on Medicine" is that of a town suffering from an epidemic in the early spring. The water supply of this town was from a stream, on the banks of which during the preceding winter there had been a case of typhoid fever. The excreta from this case had been thrown out on the snow and remained there until the spring thaw washed the organisms into the water and thence to the town. This case also illustrates the fact that the organisms can live for some months in the fæces during the winter season. Other epidemics have been traced to single cases in the families of dairymen, where the milk has become contaminated, and scores of cases have resulted in consequence. These examples are simply cited to emphasize the fact that it is a necessity of the first importance to see

to it that the excreta are thoroughly disinfected. Means of disinfection will be taken up later.

But not only should the excreta be disinfected, the linen also is a source of danger. There have been cases traced to the handling of linen after it has passed through the laundry. If it is dangerous after it has come back from the laundry, it is of much greater danger to those working in that institution. Further than this all of the china used by the patient must be considered infected, and not only disinfected every time used but also kept separate and for his use alone.

Flies are a constant source of danger. The typhoid patient must be considered as completely covered with typhoid organisms. Hence anything that touches him or anything about his bed must be considered contaminated. A fly lighting upon the patient's bed and passing thence to the dining table will very easily infect other members of the family, or a neighbor. Hence it is incumbent upon the nurse to see to it that no flies come in contact with the patient or his bed. This is best accomplished by proper screening of the room. If this is impossible, a mosquito netting should be over the bed.

Turning now to the best means of disinfecting the excreta, we will consider first the fæces. Since typhoid fever is an infection involving the intestinal tract, it is natural to look first to the fæces as an excretory vehicle. Ordinary lime is used as a means of disinfection sometimes. This is probably very good for the disinfection of privies and similar cases of soil pollution, but should not be used by the nurse for the disinfection of the fæces of her case. Nor is chloride of lime sufficient. When all disinfecting agents have been considered, one of the oldest will probably be found to be the best, namely carbolic acid. This should be used in the strength of one to twenty. To every volume of the stool two volumes of the acid should be added, and the whole allowed to stand for two hours before being disposed of. Bichloride of mercury, though a powerful disinfectant, is not so efficient in the case of the fæces.

Many organisms are excreted by way of the kidneys. This is to be expected, for the disease, especially in its early stages, is a bacteræmia. Hence it is incumbent upon the nurse to disinfect the urine as well as the fæces. This is best done by using one of two agents, bichloride of mercury or carbolic acid. The first should be used in the strength of one to one thousand. Of this a volume equal to that of the urine should be added and the whole allowed to stand for two hours. If the latter, carbolic acid, is used it should be in the strength of one to twenty and should also be added in volume equal to that of the urine and the whole allowed to stand for two hours.

Sputum should be collected in cloths and burned. It may seem at first

sight that this is an unnecessary precaution, one the reason for which could be easily seen in tuberculosis, but which seems unduly careful in typhoid. Such is not the case. The organisms are found in the sputum and it is our duty to destroy the organisms wherever found.

Chloride of lime makes an efficient disinfectant for the bath water. This may be added to the water in the tub and allowed to stand for two hours. The linen should be soaked in carbolic acid solution for two hours and then boiled for at least thirty minutes. The carbolic acid should be of the strength of one to twenty. Let me again mention that cases have been known to have been contracted from linen back from the laundry. Finally all utensils should be boiled for at least thirty minutes after using. Also all utensils should be kept strictly isolated. The faithful observance of all of these points will give the nurse the satisfaction of knowing that her patient is at least a source of danger to no one other than herself.

We turn now to consider the other side of the question, How is the nurse to protect herself? The sum and substance of all rules that can be given for this lies in two words, "Be careful." She must remember that it is safe, and the only safe thing, to consider the whole of her patient and everything that comes in contact with him to be contaminated with typhoid organisms. Such organisms transferred from the patient to her hands and from her hands to her mouth may cause her to contract the disease. On the other hand, she does not have the problem of dealing with an air-borne organism. This simplifies matters, as it is only her person and her clothes that she has to keep uncontaminated.

Relative to her clothes, there is only one way to be sure that they are uncontaminated, and that is to wear a gown over her uniform. This can be taken off when leaving the patient. After the removal of such a gown, the nurse should thoroughly wash her hands, using green soap and a brush. She should then soak them in bichloride of mercury, one to one thousand, or some other equally good antiseptic. If bichloride is used, the soaking should be continued for at least five minutes, the whole of the exposed surface of the arm being immersed.

As a further means of protecting herself the nurse should be provided with a rubber apron and rubber gloves, reaching half way from the elbow to the shoulder, to be worn when she is giving the tub and sponge baths.

Although I do not know of its being done except in isolated cases, yet I believe that the nurse should wear rubber gloves in all of her care of the patient where any handling has to be done.

There still remain two or three points which can be dispensed with in a word. The nurse should wear her hair so arranged that it will

stay in place and not fall about her face. The reason will be apparent from reference to the next point. The nurse should under no circumstances touch her face with her hands or the sleeve of her gown. And lastly she should never put any article in her mouth, be it pencil, pin, or food, while she is on duty with a typhoid case. This of course means that she must be relieved for her meals for a sufficient time to enable her to remove her gown and cleanse her hands.

I believe that the lowered incidence of typhoid is partly due to the conscientious observance of these fundamental laws on the part of the nursing public. I also believe that there is yet much to be done in the way of educating the nurses and the public to the point of realizing that typhoid fever is a disgrace to our civilization, and of the necessity of destroying the typhoid organism wherever found. It is found in the greatest numbers in the excreta of the typhoid patient.

AN EXPERIMENT IN BABY CULTURE

By ELLEN LEE

Graduate of the New York Hospital Training School

NOT long ago an electrician, a man holding a good position, and I were discussing the value of college training for his work. On the whole I think he believed that the advantages gained were not proportionately great enough for the time spent. He said that electricity was decidedly freakish, and that formulæ that worked out perfectly on paper often failed dismally when applied. So he concluded that the efficient man is he who, after obtaining splendid training under what must be ideal conditions, keeps the knowledge thus obtained in its own compartment and does not let it crowd against and push shut the open door of the mind.

Babies are not so different from electricity—quite freakish in spots. I agree with the authorities that there are laws in tune with which all babies should be kept, but I am also of the opinion that each baby has individual laws to obey that for him are equally important. To quote the idea but not the exact words of an article on child education appearing in a recent issue of the *Outlook*, we must not forget that a child born into this life is first an individual soul. This article was concerned with the mental and moral training, but the application is perfectly appropriate to our subject. Each little soul is born with his own individual machine to be controlled, namely, his body. I think we, as nurses, have in our conceit, ridden rather hastily and rather rough-shod over mother and baby instinct which, after all, we must respect. I have talked with many struggling young mothers whose babies were wretched, unhappy